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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/698,204 08/14/96 KONUMA

T 0756-1553

EXAMINER

MMC2/0214

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ART UNIT

PAPER NUMBER

2871

DATE MAILED:

02/14/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/698,204

Applicant(s)

Konuma

Examiner

Kenneth Parker

Group Art Unit

2871



☒ Responsive to communication(s) filed on Sep 30, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 13-15 and 18-60 is/are pending in the application.

Of the above, claim(s) 23 and 47-49 is/are withdrawn from consideration.

☒ Claim(s) 56-60 is/are allowed.

☒ Claim(s) 13-15, 18-22, 24-46, and 50-55 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. **Claims 25-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mawatari et al 5200847 in view of Niki, U.S. patent # 5,278,682.**

Mawatari et al discloses a liquid crystal device with a first substrate, second substrate, active devices in an active display region, driver circuits, and a sealing member, which encloses circuits, seals the liquid crystal, and which may optionally completely encloses the circuits (spec). The right side is shown with the edges of the sealant and substrates at least substantially aligned. The circuits on the substrate have a sealant between themselves and a cover glass.

The sealant being a UV curable adhesive was a conventional practice which offers the benefit of enabling selection of the time of curing and patterning, the circuits on both the driving section formed using the same processes as those in the display section. The use of common processes saves cost and the UV curing enables low cost simple fabrication. Therefore, it would have been obvious, in the device of Mawatari et al, to use a UV curable adhesive to enable patterning and simple low cost fabrication, and to use common processes for both circuit regions to save cost. The use of a fill port at the aligned edges was disclosed by Niki, stating the advantage of enabling filling without immersing the substrates in the reservoir (abstract). Therefore it would have been obvious, in the device of Mawatari et al, to employ a fill port at the aligned sides (those without drive circuits) for the benefit of avoiding immersion of the substrates. The use of silver paste to connect the electrodes was conventional, and would have been obvious

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for that reason. The use of sealing resins was conventional in semiconductor devices, and considered to be obvious for that reason.

2. Claims 13-15, 18-22, and 24-46, 50-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo JP KOKI # 1-49022 in view of Niki, U.S. patent # 5,278,682.

Matsuo discloses a liquid crystal device with first substrate, and active matrix substrate with pixels in a matrix, driver circuits comprising TFTS, second substrate, liquid crystal between the substrates a resin material covering the driver circuits, and a sealer around the liquid crystal and driver circuits. Not clearly disclosed is the presence of an "inlet", however, the materials must have been introduced to the device, so somewhere, on something there must have been an inlet, or it would have been obvious to employ an inlet to enable control of the introduction of the materials.

The use of a fill port at the aligned edges was disclosed by Niki, stating the advantage of enabling filling without immersing the substrates in the reservoir (abstract). Although Matsuo shows a device with circuits on both sides, it was well known that the drivers could be functionally equivalently placed on two sides, which would have been obvious for that reason. Therefore it would have been obvious, in the device of Matsuo, to employ a fill port at the aligned sides with two sides having the circuits, for the benefit of avoiding immersion of the substrates. It would have been further obvious to use the side with out the circuit because the sides with the

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circuit have a material enclosed in a sealant which would have been an obstruction from putting in a port there.

Providing with active matrix as amorphous silicon and the driver crystalline was well established, as the driver section is often the only one that requires the higher speed requiring crystalline silicon. The employment of and MIM diode was well known in the art as a lower cost alternative to tft's, and epoxy and UV curing resins is essentially a complete list of the conventionally use materials, used for low cost, ease of assembly or the ability to pattern. It was well known to employ spacers in the sealing materials on liquid crystal devices to enable even spacing without stress forces related to omitting them. The use of silver paste to connect the electrodes was conventional, and would have been obvious for that reason. The use of sealing resins was conventional in semiconductor devices, and considered to be obvious for that reason. Further it would have been obvious to replace the low dielectric gas with a resin, as resin were well known for having a low dielectric, and as described above, were conventionally used with semiconductor devices.

Allowable Subject Matter

Claims 56-60 are allowed.

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Response to Arguments

Applicant's arguments regarding Stewart were correct, so the reference has been replaced by Matsuo, a reference already of record and substantially equivalent to Stewart,

Applicant's arguments regarding the silver paste or spacer used to connect the substrates are not persuasive. As stated in the previous office action, applicant has not addressed the actual ground of rejection, which is that the use of those silver paste and spacers was conventional.

Applicant has not actually traversed this assertion, and has only pointed out differences between the references cited as examples and the current claims. **Other references can be cited in place of the current references, however, until an actual traversal is on the record, there is no reason to put more references on the record.** Applicant's arguments in respect to the fill port being located in a side without the driver circuits are not agreed with. The Niki reference teaches clearly applicable to Mawatari et al, which would suffer the problem described by Niki if done otherwise. With Matsuo et al, done as a device with a circuit on two sides instead of four, the inlet on the side without the circuit wouldn't have to pierce the opposite enclosing area.

Although there is no teaching of record telling this, the level of skill in the art in the liquid crystal area is considerably high, and the additional complexity required not to go through the other side would have been apparent. As clear advantages would have been apparent to those of ordinary skill, there would have been motivation to place the inlet at the circuit free side. **Applicant's advantage of reduced damage due to static may be an unexpected result, however, and may**

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have sufficient benefit to overcome the current combination. Applicant has not however, at this point, asserted or shown that the advantage of reduced damage due to static is at a sufficient level to knock down the current combination.

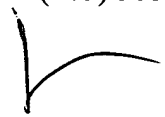
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Parker whose telephone number is (703) 305-6202.

The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or preceding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

February 12, 2001



**Kenneth Parker
Primary Examiner
Group Art Unit 2871**